

REMARKS

Claims 1 – 15 remain in this application. Claims 8 – 15 have been withdrawn from consideration. Claims 1, 2, 4, and 6 have been amended. Reconsideration of this application in view of the amendments noted is respectfully requested.

In the Office Action, claim 5 was rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Office Action stated that claim 5 requires a drying step using a scavenging agent to dry the surface of the article being treated, but the only scavenging agent disclosed is water vapor. Applicant respectfully traverses this rejection.

Claim 5 claims “one or more intermediate scavenging stages, in order to at least dry the surface layer.” In the specification, water vapor is listed as an example for use as a scavenging agent (page 7, line 35). In other words, water vapor is not the only possible scavenging agent that can be used in the present method. Hence, some other agent that is in a gaseous state may be used as a scavenging agent. This also includes substances that are naturally in a gaseous state in the conditions of the application, such as compressed air. Further, the scavenging stage(s) claimed in claim 5 are performed under conditions in which the formation of further condensate is minimal and highly unlikely to occur. For example, in the first paragraph on page 9, it is stated that the walls of the surfacing chamber are kept above 220°C and the chamber itself is kept at a temperature above 200°C and a pressure around atmospheric pressure. Under these conditions, the formation of condensate is not possible, or at least is very insignificant. Therefore, if water vapor is used as a scavenging agent, it is unlikely to condense on the surface of the metal being treated. Finally, the expression “at least” is meant to state that the final result of the scavenging stage(s) is to dry the surface layer, but this result is independent of the sub-stages or agents used in the scavenging process.

For these reasons, applicant submits that claim 5 does comply with the enablement requirement, and therefore applicant respectfully requests that the Section 112, first paragraph rejection of claim 5 be withdrawn.

Claims 1 – 7 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to specifically point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, certain language in claims 1, 2, and 4 was found to be unclear and indefinite, and the term “scavenging agent” in claim 5 was found to be indefinite for reasons similar to the reasons given in the Section 112, first paragraph rejection.

Claim 1 has been amended to delete the phrase “and possible additives” to eliminate any indefiniteness caused by this phrase.

Claim 2 has been amended to eliminate the phrase “the point of application.” “The point of application” referred to the surfacing material being formed at the same location at which the surface treatment is performed, as opposed to an offsite location. The language of claim 1 covers both of these possible embodiments. In further regards to the comments made in the Office Action in relation to the Section 112, second paragraph rejection, it should be understood that the surfacing material is brought to a gaseous state before it is permitted to react with the metal surface being treated. This is clear from claim 1, from which claim 2 depends. Claim 2 claims how the surfacing material is formed prior to the surfacing material being used to treat a metal surface. In the present method, however, the surfacing material is brought to a gaseous state (vaporized) prior to being brought into contact with the metal surface.

Claim 4 has been amended such that the word “can” has been deleted from the claim, as suggested in the Office Action.

With respect to claim 5, applicant incorporates by reference the arguments made above in regards to the Section 112, first paragraph rejection. To reiterate these arguments in summary, applicant submits that the specification supports the limitations of claim 5, namely that the method may include one or more scavenging stages in which the surface layer of the metal is dried. Therefore, the limitations of claim 5 are not indefinite.

Applicant submits that the claims as amended are definite and respectfully requests that the Section 112, second paragraph rejection of claims 1 – 7 be withdrawn.

Claim 6 was objected to because of the informality that the phrase “in order to bring the surfacing to the surface” should read “in order to bring the surfacing material to the surface.” Applicant has amended claim 6 accordingly.

Claim 2 was objected to because BIRCH-TAR(l) and CO(g), H₂(g), and CO₂(g) should not be in parentheses. Applicant has deleted these terms from claim 2. The terms were in parentheses in the international application in the same way that the reference numbers were in parentheses in the original claims and as is common in European practice. The terms in parentheses were intended to have been deleted in the preliminary amendment along with the reference numbers that were deleted from the claims to conform the claims with U.S. practice.

Claims 1 – 5 were rejected under 35 U.S.C. 102(b) as being anticipated by JP 74003741B (hereinafter “’741”). Applicant respectfully traverses this rejection.

’741 discloses a method for the surface treatment of a metal (iron) to prevent rusting. In the method, the surface treatment of iron is performed using compounds that arise from the dry distillation of deciduous wood (an acidic substance). ’741 discloses three methods to perform the application of the acidic substance to the surface of an iron product: 1) spreading of the acidic substance on the iron surface; 2) immersion of the iron product in a solution of the acidic substance and water; and 3) circulation of a solution of the acidic substance and water on the surface of the iron product. These three possibilities are listed on page 2 of the ’741 reference.

’741 fails to disclose that the surfacing material, i.e. the acidic substance, is in a gaseous state when it reacts with a metal surface, as claim 1 requires. In the present method, unlike the ’741 method, the surfacing material is brought to a gaseous state and then permitted to react with a metal surface while in the gaseous state. In the ’741 method, the surfacing material (acidic substance) is always in a liquid state when it is applied to a metal surface.

Specifically, in the spreading embodiment of the ’741 method, the acidic substance, i.e. the surfacing material, is used as a raw solution or it is diluted at a dilution rate that is

set at a relatively low value. From this description, it is certain that the acidic substance is in a liquid form, and not a gaseous form, when it is applied to the iron surface. Further, spreading of the acidic substance on an iron surface is very different from treating a metal surface with a gaseous surfacing material. In the present method, the surface treatment is performed by using a surfacing material in a gaseous state wherein the metal surface is under a "gaseous bath." Hence, the present method does not involve any spreading action using a material in a liquid state. Moreover, spreading a liquid substance in no way relates to through flow of a surfacing material in a gaseous state as in the present method.

In the immersion embodiment of the '741 method, the acidic substance that is used is diluted with water and again must be in the liquid state when applied to an iron surface because the immersion method involves dipping an iron product into the solution of acidic substance. Similar to the spreading method, an immersion method is distinctly different than a gaseous treatment process as in the present method, and an immersion method does not involve any through flow of a surfacing material in a gaseous state.

In the circulation embodiment of the '741 method, the acidic substance is also diluted with water, and the solution of acidic substance and water is circulated around the iron surface being treated. It is again apparent that the solution is in a liquid state when applied to the iron surface and not a gaseous state like the surfacing material of the present method. Further, the circulation of the solution in the '741 method is not critical to the success of the surface treatment itself and is merely performed to transport the solution to certain closed spaces, such as through the circulation system of a boiler as described in '741 on page 2. In contrast, in the present method the through flow of gaseous surfacing material in the chamber is critical for obtaining successful treatment results.

In sum, '741 discloses three methods of surface treating an iron surface, but none of the methods disclosed in '741 use a deciduous-wood based surfacing material that is brought to the gaseous state and is passed in the gaseous state through a chamber in which the metal surface to be treated has been placed, as required by claim 1 of the present application. Therefore, claim 1 is not anticipate by '741.

Claims 2 – 5, depending directly or indirectly from claim 1, are therefore also patentable over ‘741.

For these reasons, claims 1 – 5 are not anticipated by ‘741 and therefore applicant respectfully requests that the Section 102(b) rejection of claims 1 – 5 as anticipated by ‘741 be withdrawn.

Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over ‘741 in view of Miller et al. (U.S. Patent No. 5,648,416, hereinafter “Miller”). Applicant respectfully traverses this rejection. Applicant incorporates by reference the arguments made with respect to the patentability of claim 1 over ‘741 above. Based upon those arguments, claim 1 is patentable over ‘741, and any combination of ‘741 with Miller. Claims 6 and 7, depending directly from claim 1, are therefore also patentable over the combination of ‘741 and Miller.

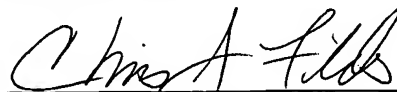
For these reasons, claims 6 and 7 are not obvious in view of the cited references, and therefore applicant respectfully requests that the Section 103(a) rejection of claims 6 and 7 be withdrawn.

This amendment and request for reconsideration is felt to be fully responsive to the comments and suggestions of the examiner and to place this application in condition for allowance. Favorable action is requested.

Respectfully submitted,

Esko Hotti

Fildes & Outland, P.C.



Christopher J. Fildes, Attorney

Registration No. 32,132

20916 Mack Avenue, Suite 2

Grosse Pointe Woods, MI 48236

(313) 885-1500